



HYSOL[®] ES1300[™]

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PRODUCT DESCRIPTION

HYSOL[®] ES1300[™] provides the following product characteristics:

Technology	Epoxy
Appearance (Part A)	Gray
Appearance (Part B)	Tan
Appearance (cured)	Brown
Components	Two component - requires mixing
Mix Ratio, by volume - Part A: Part B	1 : 1
Mix Ratio, by weight - Part A: Part B	100 : 100
Cure	Heat cure
Application	Potting and Encapsulating

HYSOL[®] ES1300[™] is a two-component filled epoxy system designed for vacuum impregnation applications. It is especially recommended for bobbin wound ignition coil applications. HYSOL[®] ES1300[™] was developed to provide crack resistance during thermal stress.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A Properties

Filler Content, %	63
Solids Content, %	100
Viscosity, Brookfield - RVF, 25 °C, cP:	
Spindle 7, speed 10 rpm	220,000
Density, @ 25 °C, g/cm ³	1.77

Part B Properties

Filler Content, %	63
Solids Content, %	100
Viscosity, Brookfield - RVF, 25 °C, cP:	
Spindle 5, speed 4 rpm	36,000
Density, @ 25 °C, g/cm ³	1.76

Mixed Properties

Viscosity, Brookfield - RVF, 25 °C, cP:	
Spindle 5, speed 4 rpm	85,000
Pot Life, 200gm mass @ 25 °C, hours	8
Gel Time @ 100 °C, minutes	50

TYPICAL CURING PERFORMANCE

Recommended Curing Conditions

3 hours @ 93 °C plus 1 hour @ 130 °C (Recommended cure)
3 hours @ 120 °C (Alternate cure)

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties:

Coefficient of Linear Thermal Expansion, ppm/°C:	
Alpha 1, Below Tg @ 40 to 60 °C	50
Alpha 2, Above Tg @ 110 to 130 °C	170
Glass Transition Temperature (Tg), °C	81
Density, , g/cm ³	1.79

Filler Content, %	63
Linear Shrinkage, %	0.65
Shore Hardness , Durometer D	94
Tensile Strength, psi	9,200
Tensile Elongation, %	1.77
Specific Gravity @ 25 °C	1.57
Thermal Conductivity, W/mk	0.75
Flexural Strength, psi	16,250
24 Hour Water Moisture Absorption, %	0.22

Electrical Properties:

Dielectric Strength, 20 mils thickness, volts/mil	1,340
Volume Resistivity, ohm/cm @ 23°C	1.42×10 ¹⁶
Volume Resistivity, ohm/cm @ 125°C	2.87×10 ¹³
Surface Resistivity, ohms @ 23°C	6.51×10 ¹⁶
Surface Resistivity, ohms @ 125°C	4.12×10 ¹³
Dielectric Constant / Dissipation Factor @ 23°C:	
1 kHz	3.81 / 0.0051
10 kHz	3.79 / 0.0041
Dielectric Constant / Dissipation Factor @ 125°C:	
1 kHz	5.02 / 0.0466
10 kHz	4.63 / 0.0531

GENERAL INFORMATION

For safe handling information on this product, consult the Material Safety Data Sheet, (MSDS).

Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local quality department for assistance and recommendations on specifications for this product.

Note: Before using this product please purge approximately 30 ml. of material prior to application. Discard purged material in accordance with the Material Safety Data Sheet. A video instruction is available upon request.

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Optimal Storage: 20 °C to 30 °C. Storage below 20 °C or greater than 30 °C can adversely affect product properties.

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.



Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\text{N} \times 0.225 = \text{lb}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{N/mm}^2 \times 145 = \text{psi}$
 $\text{MPa} \times 145 = \text{psi}$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$

Note

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Reference 0.1